

# Proposal for Orbital Platform Delivery Without Conventional Propellants of Any Kind Using Glide Vehicles, Stored Electrical Energy and Ground-Based Spread-Focus Laser Boosts

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## Introduction

In support of low-cost space launches using reusable launch systems, there are many ways in which my proposed photo-magnetic propulsion system could be used to not only accelerate an object in a vacuum, but to successfully achieve escape velocity within the atmosphere, as well.

## Abstract

Most modern satellites are exceptionally compact and lightweight and could be enclosed within a specialized glider body the skin of which, of course, would be composed of the specialized functional layers that support photo-magnetic propulsion. Even in the case of heavier satellites such as visual reconnaissance satellites, larger scale gliders could be used to place those platforms in orbit without any booster at all. If you are not familiar with my 05Sep2022 publication, please read that first to gain topical familiarity.

Such propulsion would be capable of accelerating a vehicle with 64 square feet of optically functional surface area in full-light conditions by an additional ~300 MPH per minute within a vacuum. This level of acceleration would be insufficient for a ballistic launch where one tries to move in a more or less straight line into orbit in a single thrust and one needs to overcome both friction with the atmosphere as well as gravity.

With a glider vehicle propelled by modified light, however, thrust does not decrease as air becomes thinner. Friction decreases, but thrust does not diminish. This creates the feasibility of a gradual ascent into orbit rather than a sprint. Because my photo-magnetic system converts light into kinetic energy directly, there is no need for motors or propellers and thus no need for thick air to facilitate the function of propellers or propellants to create thrust. The old rules simply do not apply.

Thus, such a glider would start out by accelerating slowly, but once it clears the thickest part of the atmosphere, it would begin to accelerate more rapidly. While in the lower atmosphere, it would be able to stay aloft with the same ease as a sailplane and would move at about the same pace. When re-entering the atmosphere, the photo-magnetic glider/delivery vehicle could decelerate sufficiently to protect itself from damaging friction during re-entry, negating the need for heavy ceramic tiles.

All of this is fundamentally possible because light has very little mass and thus, it has virtually no ability to propel an object via its mass effects. Light and, more broadly electromagnetism, has substantial capacity to propel an object through its electro-magnetic effects. Thus, we can alter the angular

momentum of light within the skin of an airframe until it is moving in the desired direction with great economy of energy and then, using a solid-state mechanism, convert that light directly into a form that exerts kinetic force in one direction. Once in that form (solitonized,) its tendency to convert its energy into kinetic force and to interact with metals magnetically is maximal, resulting in all of the energy being directly converted into an angular push on the vehicle, taking your payload wherever you want it to go.

## **Conclusion**

If the object you want to move is on the heavy side, that's fine; such a vehicle can carry its own electricity with it in a battery and emit its own light into the prismatic light-channeling skin. While near the ground, spread-focus lasers could even be used to give such a glide vehicle an initial jump start.